

Introduction to Differential Equations

Introduction to Epidemiological Modeling

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1. Consider the equation:

$$x^3 - 4x^2 + 6x - 24 = 0 . \quad (1)$$

Which, if any, are solutions of Eq. (1)?

(a) $x = 3$

(b) $x = 4$

(c) $x = \sqrt{6}i$

2. Consider the differential equation:

$$\frac{dy}{dx} = -3y + 6x + 11 . \quad (2)$$

Which, if any, are solutions of Eq. (2)?

(a) $y(x) = e^{-3x}$

(b) $y(x) = e^{-3x} + 2x + 3$